DaimlerChrysler AG

Patent Claims

1. A method for the production of a rim hole in hollow profiles, a tubular piece being pushed into the hollow profile and being placed there in such a way that it coaxially surrounds the location of the rim hole to be produced, and the hollow profile then being acted upon from outside to inside at this location by means of a tool, with the rim hole being formed, characterized in that two opposite holes (8) are first of all punched out of the hollow profile (1), at least one of these holes (8) having a diameter which is smaller than that of the rim hole (20, 26, 30) to be produced, in that the tubular piece (9) is then inserted into the hollow profile interior (17), so that it comes to lie there coaxially to the common axis (10) of the holes (8), and in that the hollow profile material of the hollow profile section (18, 23, 29) located between the hole edge (12) and the inside (16) of the tubular piece (9) is then drawn into the hollow profile interior (17) by means of at least one punch (7, 13) until it bears flat against the inside (16) of the tubular piece (9).

2. The method as claimed in claim 1, characterized in that the hollow profile (1) is perforated by the interaction of a perforating die (3), pushed into the hollow profile (1), and two opposite perforating punches (7), between which the hollow profile (1) lies.

3. The method as claimed in claim 1, characterized in that the hollow profile (1) is formed by means of the internal high pressure forming process, and in that the hollow profile (1) is perforated in the internal high pressure forming tool.

4. The method as claimed in one of claims 1 to 3, characterized in that the drawing-in operation is effected by means of a follow-on contour of the perforating punch (7), this follow-on contour adjoining a cutting edge (19) formed on the end face (6) of the perforating punch (7).

5. The method as claimed in one of claims 1 to 4, characterized in that the hollow profile material of the hollow profile section (29) is drawn into a recess (27) of the tubular piece (9), this recess (27) encircling in an annular manner and being open toward the end face (28) of said tubular piece (9).

6. The method as claimed in claim 5, characterized in that the hollow profile material is drawn in in such a way that it engages behind undercut surfaces (33) of the recess (27) of the tubular piece (9).

7. The method as claimed in one of claims 1 to 6, characterized in that the hollow profile (1) is perforated with holes (8) of the same size being formed.

8. The method as claimed in one of claims 1 to 6, characterized in that the hollow profile (1) is perforated with holes (8) of different size being formed, the larger hole being dimensioned in such a way that its hole edge (12) terminates flush with the inside (16) of the tubular piece (9), and in that the hollow profile material is drawn in only on the side of the smaller hole, the hole diameter and the hollow profile section (23) having the hollow profile material being dimensioned in such a way that said hollow profile section (23) extends across the entire length of the tubular piece (9) after the drawing-in.